

## AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A catalyst composition for polymerization of a conjugated diene, comprising:

(A) a metallocene-type complex of a rare earth metal compound;

(B) aluminoxane; and

(C) a combination of two or more organometallic compounds of group I to group III elements in a periodic table, wherein said combination is a combination of triisobutylaluminum and diisobutylaluminum hydride.

2. **(Original)** The catalyst composition according to claim 1, wherein the metallocene-type complex is a samarium complex.

3. **Canceled.**

4. **Canceled.**

5. **Canceled.**

6. **(Previously Presented)** The catalyst composition according to claim 1, further comprising an ionic compound composed of a non-coordinating anion and a cation.

7. **(Withdrawn)** A co-catalyst used along with a polymerization catalyst for a conjugated diene containing a metallocene-type complex of a rare earth metal compound, comprising: aluminoxane; and a combination of two or more organometallic compounds of group I to group III elements in a periodic table.
8. **(Previously Presented)** A production method for a conjugated diene, comprising polymerizing a conjugated diene in the presence of the catalyst composition according to claim 1.
9. **(Withdrawn)** A polymer which can be obtained by polymerization of a conjugated diene through the method according to claim 8.
10. **(Withdrawn)** The polymer according to claim 9, wherein: a cis-1,4-configuration content in microstructure of the polymer is 98.5 mol% or more; a number average molecular weight is 250,000 to 350,000; and a molecular weight distribution  $M_w/M_n$  is 2.00 or less.
11. **(Withdrawn)** A polymer of a conjugated diene, wherein: a cis-1,4-configuration content in microstructure of the polymer is 98.5 mol% or more; a number average

molecular weight is 250,000 to 350,000; and a molecular weight distribution  $M_w/M_n$  is 2.00 or less.

12. (New) The catalyst composition of claim 1 further comprising an additional metal alkyl compound or metal alkyl hydride.